

What is claimed is:

1. A polymer battery comprising:

a positive electrode active material layer;

a negative electrode active material layer placed in opposition to the positive electrode active material layer;

a polymer electrolyte layer disposed between the positive electrode active material layer and the negative electrode active material layer; and

a distance defining member included in the polymer electrolyte layer to define a distance between the positive electrode active material layer and the negative electrode active material layer.

2. The polymer battery according to claim 1, wherein the distance defining member includes resin material.

3. The polymer battery according to claim 2, wherein the resin material is a resin fabric.

4. The polymer battery according to claim 2, wherein the resin material is a porous sheet obtained by processing a resin fabric.

5. The polymer battery according to claim 4, wherein the porous sheet is formed with openings portions each with an area equal to or greater than 1 mm².

6. The polymer battery according to claim 2, wherein the resin material is a resin ball.

7. The polymer battery according to claim 1, wherein the distance defining member includes a metallic material whose surface is coated with resin.

8. The polymer battery according to claim 7, wherein the distance defining member is a metallic wire whose surface is coated with the resin.

9. The polymer battery according to claim 8, wherein the distance defining member is a porous sheet obtained by processing the metallic wire.

10. The polymer battery according to claim 9, wherein the porous sheet is formed with openings portions each with an area equal to or greater than 1 mm².

11. The polymer battery according to claim 7, wherein the distance defining member is a metallic ball whose surface is coated with the resin.

12. The polymer battery according to claim 1, further comprising:

a current collector, a bipolar electrode being formed with the current collector one surface of which is formed with the positive electrode active material layer and the other surface of which is formed with the negative

electrode active material layer,

wherein a plurality of the bipolar electrodes are laminated in series between which the polymer electrolyte layer is interposed.

13. The polymer battery according to claim 1, wherein the positive electrode active material layer includes composite oxide of lithium and transition metal, and the negative electrode active material layer includes carbon or composite oxide of lithium and transition metal.

14. The polymer battery according to claim 1, wherein electrolyte of the polymer electrolyte layer includes solid polymer electrolyte.

15. The polymer battery according to claim 1, wherein a plurality of pieces of the polymer batteries are connected to form a battery.

16. The polymer battery according to claim 1, wherein the polymer battery is applied to a drive power source for a vehicle.

17. The polymer battery according to claim 15, wherein the battery is applied to a drive power source for a vehicle.

18. A polymer battery comprising:

a positive electrode active material layer;

a negative electrode active material layer placed in opposition to the positive electrode active material layer;

a polymer electrolyte layer disposed between the positive electrode active material layer and the negative electrode active material layer; and

defining means, included in the polymer electrolyte layer, for defining a distance between the positive electrode active material layer and the negative electrode active material layer.

19. A method of manufacturing a polymer battery, the method comprising:

forming a polymer electrolyte layer, including a distance defining member, onto one of a positive electrode active material layer and a negative electrode active material layer; and

forming the other one of the positive electrode active material layer and the negative electrode active material layer onto the polymer electrolyte layer such that a distance between the positive electrode active material layer and the negative electrode active material layer is defined by the distance defining member.